REMARKS

Claims 1-20 are pending. Claims 1-20 have been amended in order to clarify these claims. No subject matter is being added. Applicant submits that the amendments do not add new material to the current Application. No amendment made is related to the statutory requirements of patentability unless expressly stated herein. No amendment made is for the purpose of narrowing the scope of any claims, unless Applicant argues herein that such amendment is made to distinguish over a particular reference or combination of references.

On page 2 of the Final Office Action, claims 1-10 and 12-19 are currently rejected under 35 USC § 103(a) as being unpatentable over US 2003/0142630 A1 (hereinafter referred to as "Budde et al.") in view of US 6,434,154 (hereinafter referred to as "Stacey et al."). Applicants are traversing this rejection.

The application presently contains three independent claims, namely claims 1, 2 and 3. Below, Applicants explain how Budde et al. in combination with Stacey et al. does not teach all of the elements of claims 1, 2 and 3.

Budde et al. relates to a time division multiplex process for controlling the access of various communication nodes to a common transmission medium (paragraph [0003]). Paragraph [0009] of Budde et al. describes a technical problem to be addressed, namely instances when an "incorrect" [malfunctioning] node starts sending an invalid message with which other nodes will be incapable of synchronizing and also "blocks" the system. As explained in paragraph [0010], the transmission of the invalid message serves to obstruct permanently starting of the entire system through the repeated transmission of the invalid messages. As indicated in paragraph [0011], the invention of Budde et al. is therefore to provide an alternative communications system that safeguards a reliable system start in the case of an incorrectly transmitting node.

Paragraph [0039] of Budde et al. describes the use of a time frame of a TDMA signal comprising a static part 6 and a dynamic part 7. Other than FIG. 4, which suggests that the dynamic part 7 comprises a time slot, Budde et al. does not describe the structure of the "dynamic part" further.

Page 2, section 5 (lines 4-6 thereof) of the Final Office Action states that Budde et al. discloses a FlexRay communications system comprising a plurality of communication nodes utilizing **dynamic communication slots**. The Final Office Action refers to page 3, paragraphs [0039] and [0040] of Budde et al. These paragraphs read as follows:

> *"[0039] FIG. 2 shows the time sequence of a TDMA signal transmitted by the node 2 of the communications system. The time frame of the TDMA signal comprises a static part 6 and a dynamic* ***part 7****. The static part 6 has four time slots 10, 11, 12, and 13. The dynamic* ***part 7*** *follows the former. The static part 6 and the dynamic*

part 7 are repeated periodically in accordance with the frame cycle time T_cyc. The time slot 10 of the static part 6 is provided for the node 0 of the communication system for the purpose of transmission via the transmission medium 5. Similarly, the time slots 11, 12, and 13 are reserved for the nodes 1, 2, and 3 of the communication system.

[0040] The dynamic part 7 is available for providing a flexible, dynamic accessing of the individual nodes 0 to 3. Such a dynamic time slot is provided, for example, in the FlexRay communications system as described in more detail in the VDI report no. 1547, 2000." [Emphasis added]

Applicants respectfully submit that the Final Office Action is incorrect in that Budde et al. fails to disclose **a dynamic section associated with communication of dynamic communication slots**.

When Budde et al. refers to "a dynamic time slot" in paragraph [0040] thereof, Budde et al. is referring to the dynamic part 7 of FIG. 2. It is very clear from FIG. 2 of Budde et al. that the dynamic communication slots are not disclosed by this document. In this respect, Budde et al. simply labels a blank space as "DYNAMIC PART", but does not actually discuss the content thereof in the text of the specification. This is not surprising, because Budde et al. is concerned with safeguarding a reliable system start which clearly does not rely upon the details of the dynamic part 7 (see paragraph [0011] of Budde et al., and note the absence of any mention in Budde et al. of the details of the dynamic part 7).

It is therefore pointed out that Budde et al. **further fails to disclose that the dynamic communication slots each have a communication slot number**, because as stated above, the dynamic communication slots are not taught by Budde et al.

Additionally, page 2, section 5 (lines 6-7 thereof) of the Final Office Action further argues that "The communications nodes further comprise a time base (Figure 2) divided into consecutive time slots". Indeed, the Advisory Action also makes this statement at line 5 thereof.

Firstly, it is pointed out that it was not until the writing of the Advisory Action that a part of Budde et al. was identified as constituting a time base. The Advisory Action suggests that the static part 6 (referred to as the static segment in the Applicants' specification) constitutes the time base recited in claims 1 and 2. Before explaining why the static segment does not constitute a time base, Applicants wish to refer to the USPTO standard of using the "broadest reasonable interpretation" of a claim, because the Examiner made reference to this standard (albeit in relation to a different feature) in the Advisory Action and Applicants wish to ensure that a reasonable and proper interpretation is applied according to the standard in relation to the features of claim 1.

In this respect and with reference to MPEP 2111, Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) sets out the "broadest reasonable interpretation" standard as being that the claim language should be given the 'broadest reasonable construction "in the light of the specification as it would be interpreted by one of ordinary skill in the art"' [Emphasis added].

Employing this standard, the skilled person would understand that the static part 6 does not constitute the time base.

Before proceeding further, it is important to highlight the distinction between the nature of a time base and a slot. In this respect, the term "time base" is one that is widely used across many fields of endeavor, but rarely recorded in writing. The skilled person would nevertheless understand that a time base is a measure of a unit of time that is consistent for the sake of measuring elapse of time. The IEEE 100 publication entitled "The Authoritative Dictionary of IEEE Standards Terms" (7th edition) defines "time base" as:

> "*A stable, periodic signal usually a square wave, used to synchronize and to provide power to circuits*" [Emphasis added]

While the definition clearly relates to electronics, it is submitted that the notion of a stable periodic signal is of relevance to the term "time base" in the context of a FlexRay communication system.

Turning to Budde et al. the skilled person would therefore understand that it is the "frame cycle time" T_cyc (see FIG. 2) that is the time base and serves as a measure of time. It is submitted that it is widely understood that the measure of time, T_cyc, is one of the time bases for a FlexRay communications system as described in Budde et al. The frame cycle time is the time taken for the combination of the static part 6 and the dynamic part 7 to elapse. Indeed, this interpretation is consistent with page 6, lines 9-11 of Applicants' specification, which discusses the "communication cycle".

In contrast to the understanding set forth above that the frame cycle time, T_cyc, is the time base, the Advisory Action asserts (lines 7-8 thereof) that "The time base is further broken down in time slots, as shown in Figure 2 (e.g., time base 6 broken into sub-time slots 10, 11, 12, and 13)".

Turning to claim 1, claim 1 requires the time base to comprise consecutively elapsing time units. According to the Merriam-Webster's Collegiate® Dictionary, the term "consecutive" is defined as:

> "*Adjective (1611): following one after the other in order: successive*"; and

"Successive" is defined as:

"*1: following in order : following each other without interruption*
2: characterized by or produced in succession" [Emphasis added]

Clearly, the static part 6 is not consecutive as it is followed by the dynamic part 7, i.e. the static part 6 is not followed by another static part 6 without interruption.

It is respectfully submitted that the interpretation of the static part 6 as the time base set forth in the Advisory Action is further flawed, **because the static part 6 is not associated with the dynamic communications slots**. Indeed, as explained above, the dynamic communication slots are not shown in FIG. 2 of Budde et al. Paragraph [0040] of Budde et al. only refers (misleadingly) to the dynamic part 7 (referred to now in the art as the "dynamic segment") as a "time slot" and makes no reference to the content of the region in FIG. 2 of Budde et al. that is labeled "DYNAMIC PART". Hence, nothing of relevance is disclosed by Budde et al. with which the static part 6 can be associated.

Furthermore, even if one points to the time slots 10, 11, 12, and 13 of FIG. 2 of Budde et al. as being the consecutive time slots of the time base, the time slots 10, 11, 12, 13 are associated with the static part 6 and not the dynamic part 7. Consequently, at best, one can infer that the time slots 10, 11, 12, 13 are associated with static (not dynamic) communications slots, because they are static communication slots.

In any event, the time slots 10, 11, 12, 13 are not part of a time base. In this respect, the skilled person would understand that the time slots 10, 11, 12, 13 of FIG. 2 only relate to the static part 6 and cannot relate to the dynamic part 7, because they are only a slot structure dedicated to the static part 6. As is known by the skilled person, the time slots 10, 11, 12, 13 do not relate to the dynamic part 7, because a dynamic slot structure is required. Here, the distinction between a time base and a slot structure can particularly be seen, because a time base does not enjoy the luxury of having dynamically variable units, whereas this is possible in relation to the dynamic communication slots. Hence, given the objective of a time base is to provide a measure of elapse of time in regular and consistent fashion, for example macroticks and microticks, a variable length dynamic communication slot simply cannot serve this purpose due to the inconsistent nature of the variation in length, because the time slots 10, 11, 12, 13 do not, at their level in the Communication Cycle hierarchical structure, constitute a time base.

It must be stressed that neither the time slots 10, 11, 12, 13 nor the "DYNAMIC PART" of FIG. 2 of Budde et al. are (and have never been), considered as, or as part of, a time base by one of ordinary skill in the art. In this respect, reference is made to the broadest reasonable interpretation standard already mentioned above.

Hence, Budde et al. fails to teach that each node is arranged to communicate, when in use, in accordance with **a time base that comprises consecutively elapsing time units associated with dynamic communication slots**.

Additionally, it is pointed out that Budde et al. does not disclose the counter arranged to determine a communications slot number that is operable to increment, or suspend incrementation of, the communications slot number. This fact is admitted, albeit conditionally, at lines 8-11 of section 5 on page 2 of the Final Office Action. Applicants hereby agree with this conclusion reached by the Examiner.

In relation to features identified as undisclosed by Budde et al., the Office Action points to Stacey et al. as disclosing these missing features.

Stacey et al. relates to the field of Asynchronous Transfer Mode (ATM) communications and solution of the problem of echo signal delay in an ATM network (see col. 1, lines 58-65 and col. 2, lines 35-51).

Col. 3, lines 25-29 and col. 4, lines 37-41 of Stacey et al. describes an access medium consisting of a regular stream of TDMA structures termed mini-slots which are created by subdivision of TDMA time slots and which contain, typically, 8 bytes of payload data together with associated overhead information. The invention of Stacey et al. does not concern arbitration of media access, but rather usage of already-allocated bandwidth of one node by different services of the same node. Indeed, use of the term "upstream bandwidth" supports this understanding that the invention of Stacey et al. relates to a single node making better use of bandwidth available to the node.

Page 3, lines 4-7 of the Final Office Action states that Stacey et al. discloses an embodiment wherein multiple mini-cells are concatenated together. The Final Office Action therefore concludes that "Stacey discloses scenarios wherein a slot number would be increased once the mini-cell is complete (Figure 2) as well as a situation wherein a slot number would not be increased when frames are concatenated together".

Applicants cannot understand how the conclusion stated has been reached, as it is respectfully submitted that the statement is vague and unclear.

In an attempt to address this point in any event, the salient part of col. 7, lines 57-63 of cited Stacey et al. states:

> "*If required, the upstream mini-slots can be concatenated together in order to deliver ATM cells (whole) or variable length fragmented messages. Concatenation of mini-slots is ideal to support the delivery of messaging or higher rate user data*".

Firstly, this passage makes no mentioned of concatenated frames (mentioned in the Final Office Action). It is therefore presumed that the Office Action is referring to enlargement of the data structure of FIG. 3 of Stacey et al.

In any event, the conclusion reached is an assumption with insufficient factual basis in Stacey et al. Furthermore, it is respectfully submitted that the assumption is incorrect.

To this end, Stacey et al. contains no implicit or explicit disclosure as to when increment of the slot number would be suspended with respect to the ongoing communication during the minislots. If the minislots are concatenated, it is submitted that the position is not materially different to that of unconcatenated minislots. In this respect, the time slots of Stacey et al. comprise a number of minislots and ongoing communication over multiple minislots beyond the duration of a time slot is not contemplated by Stacey et al., even if minislots are concatenated. Furthermore, Stacey et al. does not teach the scenario where communication of multiple mini-cells exceeds a time slot boundary. Indeed, it is not reasonable to suppose that a slot number would not be incremented in such circumstances, assuming such circumstances are even possible. Consequently, it is respectfully submitted that Stacey et al. does not teach suspension of incrementation of the slot number.

Hence, it is further submitted that Stacey et al., and in particular col. 7, lines 57-63 of Stacey et al., fails to teach that the counter arranged to determine a communication slot number is operable to increment the communication slot number if no communication is ongoing at the end of a time slot **and to suspend incrementation of the communication slot number if communication is ongoing at the end of a time slot.**

The Final Office Action states it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine minislots disclosed in Stacey et al. with the FlexRay system disclosed in Budde et al.

Referring to claim 1, claim 1 recites a communications system for providing media arbitration via a communications protocol using consecutive communication slots, the system comprising:

- a plurality of communication nodes, each node being arranged to communicate frames of data with other nodes of the plurality of communication nodes during a dynamic section associated with communication of dynamic communication slots, and each dynamic communication slot having a communication slot number; wherein
- each of the plurality of communication nodes is arranged to communicate, when is use, in accordance with a time base comprising consecutively elapsing time units associated with the dynamic communication slots, each consecutive time unit of the time base comprising at least two elapsing sub-time units and a transmission action point located at a boundary between two of the at least two sub-time units, wherein the each of the plurality of communication nodes is arranged to start and end, when in use, transmission of each frame of data at the transmission action point associated with the time base; and
- a counter arranged to determine a communication slot number operable to increment the communication slot number if no communication is ongoing at the end of a

dynamic communication slot and to suspend incrementation of the communication slot number if communication is ongoing at the end of the dynamic communication slot.

However, and with particular reference to the underlined features of claim 1 above, the teachings of cited Budde et al. in combination with Stacey et al. fail to teach the provision of: a dynamic section associated with communication of dynamic communication slots, each node arranged to communicate, when in use, in accordance with a time base comprising consecutively elapsing time units associated with dynamic communication slots, and each consecutive time unit having at least two elapsing sub-time units, as recited in claim 1. Also, the combined teachings of Budde et al. and Stacey et al. fail to teach a counter arranged to suspend incrementation of the communication slot number if communication is ongoing at the end of a dynamic communication slot, as recited in claim 1.

In view of the reasoning provided above, Applicant submits that Budde et al. in view of Stacey et al. does not render claim 1 obvious.

Claims 4 to 12 depend from claim 1. By virtue of this dependence, claims 4 to 12 are also not obvious.

Claim 2 is directed to a communication node and corresponds to the system of claim 1. Consequently, the arguments set forth above in support of claim 1 apply equally to claim 2. As such, it is therefore respectfully submitted that the teachings of Budde et al. in combination with Stacey et al. fail to teach the provision of: a dynamic section associated with communication of dynamic communication slots, each node arranged to communicate, when in use, in accordance with a time base comprising consecutively elapsing time units associated with dynamic communication slots, each consecutive time unit having at least two elapsing sub-time units, and a counter arranged to suspend incrementation of the communication slot number if communication is ongoing at the end of a dynamic communication slot, as recited in claim 2.

In view of the reasoning provided above, Applicant submits that Budde et al. in view of Stacey et al. does not render claim 2 obvious.

Claim 3 is a method claim corresponding to the system of claim 1. Consequently, the arguments set forth above in support of claim 1 apply equally to claim 3. As such, it is therefore respectfully submitted that the teachings of Budde et al. in combination with Stacey et al. fail to teach the provision of: a dynamic section associated with communication of dynamic communication slots, each node arranged to communicate, when in use, in accordance with a time base comprising consecutively elapsing time units associated with dynamic communication slots, each consecutive time unit having at least two elapsing sub-time units, and suspending incrementation of the communication slot number if communication is ongoing at the end of a dynamic communication slot, as recited in claim 3.

In view of the reasoning provided above, Applicant submits that Budde et al. in view of Stacey et al. does not render claim 3 obvious.

Claims 13 to 20 depend from claim 3. By virtue of this dependence, claims 13 to 20 are also not obvious.

The case is believed to be in condition for allowance and notice to such effect is respectfully requested. If there is any issue that may be resolved, the Examiner is respectfully requested to telephone the undersigned.

The Office Action contains numerous statements characterizing the claims, the specification, and the prior art. Regardless of whether such statements are addressed by Applicant, Applicant refuses to subscribe to any of these statements, unless expressly indicated by Applicant.

Respectfully submitted,

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